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**Royce 1-601 Alignment Ser. 3 Instructions**  
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# I-601 Alignment Instruction

## RECEIVER

- A. Inject at the ant. jack a 27.115MHz signal ( $\pm .002\%$  ;30% modulation at 1KHz).
- B. Connect an audio voltmeter and oscilloscope across on 8 ohm load and plug into external speaker jack.

Test Equipment	Test Point	Adjust	Remarks
1. RF signal generator (low range to avoid audio saturation)	Inject at ant. jack	channel sel to 13	_____
		T-101, T-102, T-103	Max. output with vol. control at max, squelch control at min. output should be more than 500mw (2.0v/8 ohm) with gen. voltage at 1uV; S & N/N = more than 10dB on all channels

## AGC RESPONSE

Set the output voltage of a signal generator at 50000uV and adjust the volume control so that the voltmeter output is 500mW (2.0v/8 ohms). Then, lower the output voltage of the generator so that the voltmeter output is 10dB down. The output voltage of the signal generator should be under 5uV at this time.

## SQUELCH

Set squelch control to maximum. Set signal generator to 500uV, and adjust VR103 so that squelch opens at 500uV signal level.

## S-METER ADJUSTMENT

- A. Set RF signal generator to 100uV. Adjust VR104 until meter indicates "S-9".

## DELTA TUNE

- A. Set the output voltage of a signal generator at 1uV.
- B. Set the Delta Tune control at the center and the squelch control at minimum.
- C. Set the Volume Control so that 500mW may be attained on the voltmeter output. Then, with the Delta Tune control at the "+" side, vary the frequencies of the signal generator until the maximum voltmeter output is attained. Read the frequency variance of the signal generator. Do the same thing for the "-" side. Ascertain that the frequency variation is within  $\pm 1\text{KHz}$  to  $2\text{KHz}$ .

## AUDIO POWER CHECK

With a generator output of 1mV and squelch control at minimum, audio output should be more than 4w (5.7v/8 ohm) at maximum position of volume control.

## TRANSMITTER

- A. Power Supply – 13.8VDC.
- B. Use a suitable power meter, non-inductive dummy load and oscilloscope connected to antenna jack.

Test Equipment	Test Point	Adjust	Remarks
1. Power Meter	antenna jack	T-201, T-202, L-203, L-204	Adjust for maximum output power.
2. Freq. Counter	across dummy load	—————	Check all channels $\pm$ 800Hz
3. A.F. Oscillator with AF voltmeter in shunt (1KHz 10mV)	Inject at mic input	VR-201	–90% modulation on oscilloscope
		—————	Reduce AF oscillator output to 5mV; modulation $\geq$ 50%

- C. With 0% modulation and carrier power 3.5 to 4 Watts, adjust VR202 until meter reads between S9 and S10.